ABSTRACT

A disk drive controls head velocity during ramp load/unload by measuring voltages across a VCM and a sense resistor in series with the VCM, calculating a back EMF voltage using the VCM and sense resistor voltages, and adjusting the head velocity using the back EMF voltage. An embodiment includes amplifying the VCM and sense resistor voltages, multiplexing the amplified voltages, digitizing the multiplexed voltages and calculating the back EMF voltage in discrete-time based on the digitized voltages. Another embodiment includes selecting between PWM and IR cancellation techniques and calculating the back EMF voltage using the selected technique.